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JOURNAL OF

THE NEW ENGLAND BOTANICAL CLUB

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THE FRENCH APOTHECARY'S PLANTS IN BURSER'S HERBARIUM

H. O. Juel

Caspar Bauhinus in his *Prodromus Theatri botanici*, printed in 1620, describes several plants which had been communicated to him by Joachim Burserus who had received them from an unnamed apothecary in Paris, with the statement that they were collected in the country named Toupinambault in Brazil. Specimens of these plants, in addition to a few others from the same source, are inserted in Burserus' large herbarium or "Hortus siccus" preserved in the Botanical Museum in Upsala.[1] On Burser's labels the same statement is given about their origin, only with the exception of one plant (*Trillium*) which is said to be from "Gallia nova," that is, the colony "Nouvelle France" which the French had founded on the St. Lawrence River about the year 1608. But as all these plants belong to North American species, we may assume that all of them were collected in Canada. Linnaeus, who made extensive studies in Burser's herbarium and mentioned several of these specimens in his dissertation "*Plantae Martino-Burserianae*," came to the same conclusion about their origin, as can be seen from a passage in his *Species plantarum*, ed. I, p. 305.

Here follows an enumeration of the North American plants in Burser's Hortus siccus. After the number given in that collection comes a copy of Burser's label inclosed in quotation marks. References to the works of Bauhinus and Linnaeus and to the "*Studien*

[1] Further information about this famous herbarium is to be found in a memoir entitled "*Studien in Burser's Hortus Siccus*" (Nova Acta R. Soc. Scient. Upsal., Ser. IV, Vol. 5, 1923).

in Burser's Hortus Siccus" are put in parentheses. The modern name is printed in italics.

IV. 29. "Campanula serpillifolia Bauh. Figura est in Prodromo. Accepi Parisiis a Pharmacopaeo, ex Toupinambault allatam." (Bauh. Prodr., p. 35; Linn. H. Cliff., p. 321; Stud., p. 44.) *Linnaea borealis* L.

VII (2) 57. "Videtur eadem cum praecedenti. Ex Toupinambault attulit Pharmacopoeus Parisiensis." *Osmorrhiza* spec., probably *O. Claytoni* (Michx.) Clarke.

VIII. 8. "Affinis praecedenti. Ex Toupinambault sive Brasilia attulit Pharmacopoeus Parisiensis." (Linn. Pl. Mart.-Burs., n. 81; Stud., p. 57.) *Aralia nudicaulis* L.

IX. 12. "Solanum triphyllon Brasilianum Bauh. Ex Gallia nova Lutetiam attulit Pharmacopoeus quidam." (Bauh. Prodr., p. 91; Linn. Pl. Mart.-Burs. nr. 95, footnote; Sp. pl., p. 340; Stud., p. 62.) *Trillium grandiflorum* Salisb.

IX. 138. "Ranunculus Brasilianus. An Ranunculus montanus Aconiti folio albus flore majore Bauh? Ex Toupinambault attulit Lutetiam Pharmacopoeus." (Linn. Pl. Mart.-Burs., p. 155; Stud., p. 65.) *Anemone dichotoma* L., TYPE SPECIMEN.

X. 11. "Cum praecedente convenit. Ex Brasilia per pharmacopoeum Lutetianum." *Actaea*, probably *rubra* (Ait.) Willd.

X. 47. "Vix differt a praecedente. Pharmacopoeus Parisiensis ex Brasilia attulit." *Cypripedium parviflorum* Salisb.

X. 100. "Pyrola Brasiliana foliis cordatis Asari. Ex Brasilia des Toupinambaux attulit pharmacopoeus Lutetianus." (Linn. Pl. Mart.-Burs., p. 156; Stud., p. 67.) *Pyrola asarifolia* Michx.

X. 102. "Pyrola rotundifolia Brasiliana minor. Ex Brasilia per pharmacopoeum Parisiensem accepi." *Pyrola secunda* L.

X. 103. "Pyrola Brasiliana minor, folio magis acuminato. Cum praecedente simul accepi. Forte non differt ab ea quae subseq [uitur]." *Pyrola secunda* L.

X. 106. "Pyrola Alsines flore Brasiliana major Bauh. Des Toupinambaux per pharmacopoeum Parisinum Parisiis ad Bauhinum transtuli." (Bauh. Prodr., p. 100; Linn. Pl. Mart.-Burs., p. 156; Sp. pl. ed. I, p. 118; Stud., p. 68.) *Cornus canadensis* L., TYPE SPECIMEN.

X. 107. "Pyrola Alsines flore Brasiliana minor Bauh. Ex eodem cum priore loco, unde et Bauhino attuli." (Bauh. Prodr., p. 101; Linn. Pl. Mart.-Burs., p. 157; Stud., p. 68.) *Trientalis americana* Pursh.

X. 137. "Dracunculus sive Serpentaria triphylla Brasiliana Bauh. Apud Toupinambaultios legit pharmacopoeus Parisiensis, mihique co[mmun]icavit, unde postea Bauhino exemplar dedi." (Bauh. Prodr., p. 101; Linn. Sp. pl. ed. I, p. 965; Stud., p. 69.) *Arisaema triphyllum* (L.) Schott.

XI. 8. "Viola tricolor erecta latifolia Brasiliana. Apud Toupinambaultios legit pharmacopoeus, Lutetiamque attulit." (Linn. Pl.

Mart.-Burs., p. 157; Sp. pl. ed. I, p. 936; Stud., p. 70.) *Viola canadensis* L., TYPE SPECIMEN.

XI. 98. "Caryophyllus praecedenti similis Brasiliana. Apud Toupinambaultios legit Pharmacopoeus q[ui]dam Lutetianus, mihique co[mmun]icavit." *Sisyrinchium angustifolium* Mill.

XIII. 82. "Melampyrum Brasilianum cyanifolium. Liceat interim sic appellare hanc, a pharmacopoeo mihi datam Lutetiae, quam apud Toupinambaultios legerat." (Linn. Pl. Mart.-Burs., p. 160; Stud., p. 82.) *Castilleja coccinea* (L.) Spreng.

XIV (1) 4. "Lysimachia lutea corniculata Bauh. Lysimachia Virginiana. In Hortis Misniae, Seelandiae. Praesens exemplar attulit Pharmacopoeus Parisiensis ex Brasilia." An *Oenothera*. The flowers are destroyed by insects.

XV (1) 7. "Gnaphalium latifolium Americanum Bauh. Basileae in horto Bauh. Attulit quoque pharmacopoeus Parisiensis ex Brasilia." *Anaphalis margaritacea* (L.) Bth. & Hook.

XVII. 61. "Polygonatum latifolium perfoliatum Brasilianum Bauh. Per pharmacopoeum quendam Lutetiae accepi ex Brasilia." (Bauh. Prodr., p. 136; Linn. Sp. pl. ed. I, p. 305; Stud., p. 99.) *Uvularia grandiflora* Sm.

XVII. 62. "Polygonatum latifolium Brassilianum flore racemoso muscoso. Ex eodem cum praecedente loco." *Smilacina racemosa* (L.) Desf.

XVII. 76. "Hederacea quaedam planta ex Brassilia. Apud Toupinambaultios legit pharmacopoeus Parisiensis." *Tiarella cordifolia* L.

XVII. 77. "Cum praecedente quandam similitudinem gerit. Ex eodem loco." *Mitella diphylla* L.

XVIII (1) 78. "Caryophyllata aquatica nutante flore Bauh. In Misnia, Bohemia, Helvetia, Dania. Accepi quoque ex Brasilia." *Geum rivale* L. This specimen, then, may not be American.

XIX. 41. "Thalictrum maius Brassilianum. Videtur idem cum vulgari. Ex Brassilia attulit Pharmacopoeus Lutetianus." *Thalictrum dioicum* L.

XX. 13. "Adiantum fruticosum Brasilianum Bauh. Ex Brasilia accepi per pharmacopoeum quendam Parisiis." (Bauh. Prodr., p. 150; Stud., p. 108.) *Adiantum pedatum* L.

XXII. 77. "Rhus angustifolium Bauh. Pharmacopoeus Parisiensis ex Brassilia attulit. Puto nil aliud esse quam Sorbum." (Bauh. Prodr., p. 158; Linn. Sp. pl. ed. I, p. 265; Stud., p. 112.) *Rhus glabra* L.

XXII. 79. "Rhus Myrtifolia a suo vicino vix differens. Apud Toupinambaultios egit Pharmacopoeus q[ui]dam Parisinus mihique co[mmun]icavit." *Myrica gale* L. Another specimen of this species is glued on the same sheet.

DJURSHOLM, SWEDEN.

POTENTILLA CANADENSIS AND P. SIMPLEX

M. L. Fernald

(Plates 214 and 215)

During a recent correspondence with Professor H. O. Juel, regarding Kalm's American plants preserved at Upsala, Professor Juel referred to *Potentilla pumila* Poir. as identical with *P. canadensis* L. When this identification of the two first came to my attention I at once wrote Professor Juel that Rydberg (in his *Monograph of the North American Potentilleae*[1] and in his elaboration in the North American Flora[2]) and, consequently, other American botanists, who have automatically followed Rydberg, are treating *P. canadensis* and *P. pumila* as wholly different species. It soon became clear, however, that, although Michaux, Nestler, Hooker and some American botanists of the first half of the last century and some in the first years of the present century had properly identified the species, American botanists in recent years have wholly misinterpreted both *P. canadensis* L. and *P. simplex* Michx., as well as *P. caroliniana* Poir. and, to some extent, *P. sarmentosa* Muhl.

In his article, *A Revision of Kalm's Herbarium in Upsala*,[3] a paper which should be carefully studied by American taxonomists, Professor Juel, in 1921, really settled the identity of *Potentilla canadensis:*

Potentilla canadensis L. A specimen, so determined by Kalm. It belongs to the species which in modern American floras is called *P. pumila* Poir.

The description of P. canadensis given by Linn. from Kalm's specimens contains these words: "habitus Fragariae," "caulis digitalis," and "similis P. vernae." These characteristics suit the plant called P. pumila Poir. far better than the P. canadensis of the American floras, for the latter is a much taller plant with little resemblance to P. verna L. I therefore think that P. pumila Poir. is what Linn. meant by his P. canadensis, and that it ought accordingly to be called by the latter name. The "P. canadensis" of modern authors should then be re-named.

In a letter of November 23, 1930, Professor Juel wrote: "I have seen the specimen in Linné's herbarium in London on which he has written '15 K canadensis.' It was collected by Kalm, as indicated by the letter K. I made this note about it: 'is quite small, even as Kalm's own specimen, evidently—P. pumila Poir." I, too, examined the Kalm specimen in the Linnean herbarium about thirty years ago and have a good photograph of it before me. On the basis of this and earlier identifications and identification of the type of *P. simplex* Michx.,

[1] Rydberg, Mem. Dept. Bot. Columbia Univ. ii. 35–37 (1898).
[2] Rydberg in N. Am. Fl. xxii[4]. 302, 303 (1908).
[3] Juel, Svenska Linné-Sällskapets Årsskr. iv. 19, 20 (1921).

New England botanists during the first decade of the present century were correctly using the names *P. canadensis* and *P. simplex*, an understanding reflected in the Flora of Vermont (1900) by Brainerd, Jones & Eggleston. In a foot-note from their record of "**P. simplex,** Michx. (P. Canadensis of American authors in part.)", they said: "Just as this is going to press a letter is received from M. L. Fernald stating that '*Potentilla simplex* Michx. is the common sprawling species of New England, while *P. Canadensis* is a low, hardly repent, canescent species which hardly reaches southern Maine and New Hampshire.' It was not possible to re-examine Vermont specimens other than those in the herbarium of the University of Vermont. All of those proved to be *P. simplex*."[1] In keeping with this understanding of the New England botanists at that period it is significant that of the 28 numbers of *P. canadensis* collected between 1895 and 1905 and represented in the herbarium of the New England Botanical Club 25 were correctly named; but that of the 68 numbers in the same herbarium collected from 1908 to 1918 62 bear the wrong name!

This complete reversal was due to the fact that, in deference to the treatment in Rydberg's *Monograph*, the application of the names was unfortunately reversed in the 7th edition of Gray's Manual. The photograph of the actual Linnean type (PLATE 214, FIG. 1) a small specimen received from Kalm, and the photograph of Kalm's better specimen preserved at Upsala (PLATE 214, FIG. 2), generously supplied by Professor Juel, clearly demonstrate, however, that, as he pointed out ten years ago, *P. canadensis* L. is the plant passing in current American treatments as *P. pumila* Poir. Poiret's *P. pumila* was well described and, like the Linnean species, was compared by its author with *P. verna;* also with *P. acaulis*. I have, as yet, been unable to see a photograph of it, but the description is so clear that there is no reasonable doubt that *P. pumila* Poir. is *P. canadensis* L.

The species which in recent years has erroneously passed in America as *Potentilla canadensis* is a much coarser plant than true *P. canadensis*, with the firm flowering stem erect or strongly ascending, but after anthesis becoming procumbent and sending out many prostrate branches which root at tip. It has three fairly marked extremes: one, called by Rydberg and others "*P. canadensis,*" with "stems . . . generally with spreading pubescence" (*Rydberg,* N. Am. Fl.) or "spreading-hirsute" (*Robinson & Fernald* in Gray, Man. ed. 7) and

[1] Brainerd, Jones & Eggleston, Fl. Vt. 51 (1900).

extending northward only to southern Ontario, southern Quebec and southwestern New Brunswick; a second extreme, more common northward, the plant treated by Rydberg (N. Am. Fl.) as *P. simplex* Michx., by Robinson & Fernald as *P. canadensis*, var. *simplex*. This plant has the "stem . . . erect . . . appressed-pubescent" (*Rydberg*) or "covered *with* shorter *appressed or subappressed hairs or glabrate*" (*Robinson & Fernald*) and it extends north to the Laurentide region of Quebec, northern Maine, Prince Edward Island, Cape Breton and Newfoundland. The third extreme is like the first but with the lower surfaces of the leaves densely silvery-silky, a plant of the interior, from Pennsylvania to Illinois and adjacent regions. As geographic varieties the three are very good, quite parallel with the varieties of *Fragaria vesca* and of *F. virginiana*.

That the tall plant which has recently been passing as *Potentilla canadensis* is not the Linnean *P. canadensis* is now clear, and when the original description of *Potentilla simplex* Michx. is examined it is quickly obvious that Rydberg and, following him, Robinson & Fernald and others, have been misapplying that name also, for Michaux had, not the plant with "appressed-pubescent" or "glabrate" stems, but the extreme which has recently been erroneously called *P. canadensis*. Michaux's diagnosis of his *P. simplex* was unequivocal: "P. erecta, simplex, hirsuta," and his species carefully studied[1] by Nestler, was beautifully illustrated[2] by him. Nestler's illustration (here reproduced as PLATE 215, FIG. 1) of the Michaux type certainly represents the "*P. canadensis*" of recent American authors, and my own decision after examination of the Michaux material was wholly in accord with this interpretation. So far as I can find, the common smoother plant, the only one extending far to the north, which has been erroneously identified as *P. simplex*, has no name; nor can I find a name for the argenteous extreme of the interior.

In the mountains of Virginia and eastern Tennessee and on the Ozark Plateau of southern Missouri there is a plant with cuneate-obovate leaflets, flabelliform or filiform repent stolons and a very conspicuous villosity on petioles, stems, calyx and both leaf-surfaces. This is the plant treated by Rydberg in the North American Flora as

[1] "Parisiis herbaria *Tournefortii*, *Vaillantii*, *Michauxi*, nec non locupletissimum thesaurum Musaei historiae naturalis pervolvi; cujus Administratores mihi insignitur faverunt ut species tam novas quam iconibus nondum illustratas in lucem ederem."—Nestler, Monog. Potent. p. ii (1816).

[2] Nestler, l. c. 25, 40, t. ix. fig. 2 (1816).

Potentilla caroliniana Poir. in Lam. Encyc. v. 595 (1804). Rydberg correctly describes the Tennessee and Missouri plant as having "stems prostrate, . . . usually rooting at the nodes, . . . with spreading pubescence; . . . petioles . . . with coarse usually reflexed hairs; leaflets broadly obovate with a cuneate base, coarsely toothed above, . . . loosely pubescent with long and spreading hairs on both sides; stem-leaves similar but small."[1] Poiret, however, said that *P. caroliniana* had the stems firm and stiff and the leaflets ovate-oblong and serrate-dentate around their margins (not merely above): "*foliolis ovato-oblongis*, . . . facile à reconnaître par ses folioles ovales, oblonges, . . . Ses tiges longues d'un pied, assez fermes, velues, . . . droites . . . folioles . . . divisées en dents de scie assez fortes à leur contour." Poiret's description at once suggests *P. simplex* Michx. and Nestler, when he "turned over (pervolvi)" the specimens at Paris performed an "autopsy" on Poiret's type. The result was that the only synonym of *P. simplex* given by Nestler was "*P. caroliniana Poiret Encycl. 5. p. 595.* (ex autopsia herb. Lamarck)"[2]; and Lehmann in his Monographia (1820) correctly made *P. caroliniana* a synonym of *P. simplex.*

The most extreme specimens of "*P. caroliniana*" Rydb., not Poir., suggest the possibility that they represent a definite specific type, but one of the collections from Tennessee and the material from Virginia, although having the long villosity of the Missouri plant, are otherwise inseparable from typical sericeous *P. canadensis* of the Coastal Plain and Piedmont areas to the east. It is most probable that Rydberg's "*P. caroliniana*" is the primitive type (now found on the Ozark and Appalachian Uplands) from which the more sericeous *P. canadensis* of the Atlantic coastwise area and the eastern Great Lake region was derived.[3] So far as I can ascertain this very villous plant has no name; it must be treated as a geographic variety of the latter species.

Another name which has to be considered is *Potentilla sarmentosa* Muhl. in Willd. Enum. Pl. Hort. Berol. 554 (1809). The description, "folliis . . . obovatis grosse serratis . . . caule procumbente sarmentoso," and Willdenow's statement that it is similar to the prostrate *P. reptans* might apply either to mature *P. canadensis* or

[1] Rydb. N. Am. Fl. xxii.[4] 303 (1908).

[2] Nestler, l. c. 40 (1816).

[3] For consideration of this relationship see Fernald, *Specific Segregations and Identities in some Floras of eastern North America and the Old World*, Rhodora, xxxiii. pp. 38–60 (1931).

to the midsummer and autumnal procumbent state of *P. simplex*. Both interpretations were soon made by students of the group. Nestler (1816) did not know the plant, but simply compiled his description. Lehmann (1820), after examining the original material, placed *P. sarmentosa* in the synonymy of *P. simplex;* but in 1834 Hooker placed it, with reservations, under both *P. canadensis* and *P. simplex*. In the discussion of *P. canadensis* (with *P. pumila* and *P. sarmentosa* as synonyms) Hooker said, "Dr. Boot's specimens of '*P. sarmentosa* of Muhl.,' (and Willd.?), precisely accord with Dr. Torrey's, and with Nestler's description and figure [of *P. canadensis*]. It may be a state of *P. simplex* before the appearance of the runners, but the leaflets are broader and much paler, and silky beneath." [1] Then in the synonymy of *P. simplex*, Hooker gave, besides *P. caroliniana*, "P. sarmentosa. *Willd.* (fide *Lehm.* ex specim. in *Herb. Willd.*) an *Muhl.?*"

The confusion as to the exact identity of *Potentilla sarmentosa* is now, fortunately, cleared, for Professor Diels has most kindly supplied me with very clear photographs of the original material in the Willdenow Herbarium. There are two specimens, each a characteristic runner: sheet no. 2 (our PLATE 215, FIG. 3) with the most characteristic foliage and the appressed pubescence of *P. canadensis* (*P. pumila*), the other, sheet no. 1 (our PLATE 215, FIG. 4) with the foliage and stipules and the hirsute petioles of *P. simplex*. In other words, *P. sarmentosa* was based on runners of both *P. canadensis* and *P. simplex* and was a perfect case of a *nomen confusum*. As already noted, the earlier students of our flora and of the genus *Potentilla* had a far more accurate understanding of the species just discussed than their successors have usually shown. Michaux in 1803 clearly differentiated the two species as *P. canadensis* and *P. simplex*. Nestler, in 1816, basing his conclusions on personal examination of the types of Michaux, Poiret and others at Paris, published an authentic plate of *P. simplex* and unequivocally reduced *P. caroliniana* to it. He correctly understood *P. canadensis* and illustrated it, apparently from material collected by Michaux. In 1818, Amos Eaton[2] correctly defined both *P. canadensis* and *P. simplex*, even to noting the slight but fairly constant difference in the petals (in *P. canadensis* "subentire," in *P. simplex* "round-obcordate"), but he treated *P. pumila* as a third species, for

[1] Hook. Fl. Bor.-Am. 1. 192 (1834).
[2] Eaton, Man. ed. 2: 378, 379 (1818).

which *P. canadensis* "may be mistaken." Lehmann, in 1820, correctly understood the two species; in 1824 Jacob Bigelow[1] gave the best characterizations of the two ever published, calling them *P. sarmentosa* (*P. canadensis* being unknown to him) and *P. simplex;* and, as already noted, Hooker correctly understood the two species in 1834.

Torrey & Gray, in 1840,[2] lost sight of the numerous characters (10 contrasting characters enumerated in the synopsis at the end of this paper) and treated the three plants recognized by them as variations of one species and in 1843 Torrey went so far in his failure to understand the plants as to write of *P. canadensis:* "Early in the spring . . . it is the *P. pumila* of Poiret. Later in the season . . . it is the ordinary *P. Canadensis.* Its smoother and more erect state . . . is the *P. simplex* and *P. sarmentosa* of authors."[3] From then on, the two species remained merged as one variable species in the treatments of Gray, Lehmann (Revis. Pot., 1856), Wolf and others; and in 1891 Britton emphasized his merging of them by publishing a special note, saying: "a study of the plant during the past spring in the vicinity of New York has convinced me that *simplex* cannot be separated [from *P. canadensis*] even as a variety, for I found them growing from the same clump. In shaded woodlands the *simplex* condition prevails, while the other prefers open places, and reaches its extreme degree of depression (var. *pumila* T. and G.) in very dry, sterile soil. There is, therefore, no more reason for maintaining varieties in it than in the case of *Erigeron Canadense,* which varies from an inch in height to ten feet or more."[4] More recently, however, everyone who has an intimate field-knowledge of our flora has realized that there are two quite distinct species (Rydberg even treating them as four). If, in reviving the old names in 1898, the original descriptions and their types had been more carefully considered or if Nestler's first-hand identifications of the species of Michaux and of Poiret had been given the weight they deserve, much unnecessary recent confusion could have been avoided.

Since the present paper almost completely realigns the names in the group, it is important to include a brief synopsis of the plants involved and their essential bibliography.

Potentilla canadensis L. Dwarf: rhizome premorse, cylindric, in well-developed plants 0.5–2 cm. long, 4–8 mm. thick: stolons not

[1] Bigelow, Fl. Bost. ed. 2: 204 (1824).
[2] Torr. & Gr. Fl. N. Am. i. 443 (1840).
[3] Torr. Fl. N. Y. i. 208 (1843).
[4] Britton, Bull. Torr. Bot. Cl. xviii. 366 (1891).

bearing tuberous enlargements at their tips: stems at flowering time 0.1–1.5 dm. high, soon becoming prostrate, filiform or flagelliform, 0.3–1 mm. thick: cauline leaves during anthesis not well expanded (those subtending flowers 0.5–3 cm. long, including the petiole, at expansion of the flower); leaflets narrowly cuneate-obovate, coarsely and deeply 5–15-toothed around the rounded summit, entire and cuneate from near the middle; the middle leaflet of the largest leaves (of each plant) 1.5–4 cm. long (—6 cm. in var. *villosissima*): free blades of the basal stipules oblong-lanceolate, flat; stipules (mostly 3-cleft) of mature primary cauline leaves 4–12(–15) mm. long: first flowers usually borne from the node above the first well-developed internode: petals rounded at summit or retuse: first flowers expanded in eastern Massachusetts April 2–June 7.

Two well-marked varieties:

Young growth (stems, petioles, lower leaf-surfaces, calyx, etc.) silky-pilose with appressed or loosely ascending fine pubescence. . Var. *typica.*
Young growth long-villous, the pubescence of stems, petioles, peduncles and calyx loosely spreading to reflexed. . . . . Var. *villosissima.*

Var. **typica.** *P. canadensis* L. Sp. Pl. i. 498 (1753); Michx. Fl. Bor.-Am. i. 303 (1803); Nestler, Monog. Potent. 27, 58, t. x. fig. 1 (1816); Hook. Fl. Bor.-Am. i. 192 (1834). *P. pumila* Poir. in Lam. Encycl. v. 594 (1804); Rydb. in Britt. & Br. Ill. Fl. iii. 515, fig. 1935a (1898), in ed. 2, ii. 251, fig. 2229 (1913), Mem. Dept. Bot. Columbia Univ. ii. 37, t. 18, figs. 1 and 2 (1898), in N. Am. Fl. xxii[4]. 303 (1908); Robinson & Fernald in Gray, Man. ed. 7: 484 (1908). *P. sarmentosa* Muhl. in Willd. Enum. Pl. Hort. Berol. 554 (1809), in part (no. 2 in herb. Willd.); Bigel. Fl. Bost. ed. 2: 204 (1824). *P. canadensis,* β. *pumila* (Poir.) Torr. & Gr. Fl. N. Am. i. 443 (1840); Gray, Man. 122 (1848). *P. canadensis,* β. *sarmentosa* Wood, Class-Bk. 104 (1845). *Callionia canadensis* (L.) Greene and *C. pumila* (Poir.) Greene, Leaflets, i. 238 (1906).—Dry open soil, southern Maine, southern New Hampshire and southern Vermont south to South Carolina, inland across New York to southwestern Ontario and northern Ohio. The following are representative. Maine: Topsham, *Chamberlain,* no. 556; Brunswick, July 25, 1901, May 25, 1912, *Kate Furbish;* Cape Porpoise, May 25, 1895, *Fernald;* North Berwick, May, 1892 and 1893, *Parlin;* South Berwick, June 13 and 14, 1896, *Parlin & Fernald.* New Hampshire: Haverhill, *Fernald.* no. 15,542; Derry, May 10, 1913, *C. F. Batchelder;* Hampton Falls, May 21, 1914, *Batchelder;* Mason, May 15, 1915, *Batchelder;* Merrimack, June 4, 1917, *Batchelder;* Walpole, May 26, 1917, *Bean & Fernald;* Jaffrey, *Robinson,* no. 470; Hinsdale, May 15, 1919, *Batchelder.* Vermont: Putney Mt., Brookline, May 31, 1915, *L. A. Wheeler;* Westminster, *Robinson,* no. 102; Rockingham, May 26, 1917, *Woodward & Wheeler.* Massachusetts: West Manchester, June 7, 1913, *F. T. Hubbard;* Ashby, May 30, 1914, *Knowlton;* Boxborough, *Hubbard & Torrey,* no. 495; Lexington, *Day*

& Fernald in Pl. Exsicc. Gray. no. 100; Milton, May 13, 1900, *Churchhill;* Marshfield, June 6, 1909, *Knowlton;* New Bedford, May 24, 1903, *Hervey;* Barnstable, *Fernald & Long,* no. 16,877; Eastham, *F. S. Collins,* nos. 2011, 2018; Nonamesset, *Fogg,* no. 2677; West Tisbury, *Seymour,* no. 1232; Nantucket, *Day,* no. 20; Leominster, May 30, 1914, *Fernald & Bean;* Southbridge, May 20, 1916, *Churchill & Woodward;* Brookfield, May 16, 1913, *Fernald & Hunnewell;* Greenfield, May 10, 1912, *Batchelder, Kennedy & Williams;* Ware, May 16, 1922, *Knowlton;* Chicopee, May 18, 1913, *Murdock & Torrey;* New Marlboro, July 24, 1912, *R. Hoffmann.* Rhode Island: Providence, May 8, 1904, *E. F. Williams;* Barrington, May 30, 1911, *Fernald;* Warwick, May 2, 1908, *Hope;* Westerly, August 31, 1919, *Weatherby & Collins;* Block Island, *Fernald, Long & Torrey,* no. 9657, *Beattie,* no. 4803. Connecticut: Franklin, July 4, 1912, *Woodward;* Southington, *Andrews,* no. 226; Waterbury, *Blewitt,* no. 691; Salisbury, June 9, 1906, *Fernald;* Fairfield, May 12 and July 31, 1907, *Eames;* Bridgeport, April 25, 1897, *Eames.* New York: Pelham, May 5, 1886, *D. W. Parker;* Dryden, *Eames & MacDaniels,* no. 4310; Ithaca, *Wiegand & Metcalf,* no. 4309, *Bechtel & Wiegand,* no. 6702; Spencer, *Dean & Eames,* no. 4311. Pennsylvania: West Philadelphia, May 17, 1923, *Meredith.* Maryland: Harper's Ferry, April 17, 1890, *S. Watson;* Bladensburg, July 6, 1913, *Steele* (transition to var. *villosissima*). District of Columbia: Takoma Park, May 5, 1899, *T. A. Williams;* Sheridan's Creek, Washington, May 29, 1913, *Steele.* Virginia: Mt. Vernon, *Pease,* no. 7413; Hot Springs, *Hunnewell,* no. 4026. South Carolina: Summerville, *Robinson,* no. 253. Ontario: Tillsonburg, *J. Macoun,* no. 34,428. Ohio: Newell Ledge, Portage Co., *R. J. Webb,* no. 5244. Apparently crosses with *P. simplex.*

Forma **ochroleuca** (Weatherby), n. comb. *P. pumila,* forma *ochroleuca* Weatherby, Rhodora, xi. 153 (1909).—Petals cream-colored. Known only from the original station (now obliterated), at Cambridge, Massachusetts.

Var. **villosissima**, n. var., caulibus petiolis pedunculis calicibusque longe villosissimis, villis laxe divergentibus vel reflexis; foliolis maturis 1.5–6 cm. longis.—Virginia, Tennessee and Missouri; doubtless elsewhere.[1] Virginia: between Warrenton and the hills, April 19, 1913, *Tidestrom,* no. 6226. Tennessee: top of Cade's Cove Mt., Blount Co., May 20, 1928, *W. A. Anderson, Jr.,* no. 911; three miles north of Coal Creek, Anderson, April 6, 1928, *W. A. Anderson, Jr.,* no. 726. Missouri: common on hills, Monteer, May 13, 1901, *Bush,* no. 453 (type in Gray Herb.); common in woods, Monteer, *Bush,* no. 186; Rhyse, Dent County, May 9, 1927, *J. H. Kellogg.* Var. *villosissima* is the *P. caroliniana* Rydb. N. Am. Fl. xxii[4]: 303 (1908), not Poir. in Lam. Encyc. v. 595 (1804).

[1] Introduced, undoubtedly with earth accompanying roots of trees or shrubs from the Ozark area, into the Arnold Arboretum, Jamaica Plain, Massachusetts (*E. J. Palmer,* no. 28,014).

P. SIMPLEX Michx. Coarser than *P. canadensis:* rhizome irregularly enlarged, often nodose or moniliform-thickened, up to 8 cm. long, 0.5–2 cm. thick: stolons late in the season bearing tuberous enlargements (young rhizomes), especially at the rooting tips: stems at first erect or ascending, up to 2–5 dm. high, then greatly prolonging, arching, forking and rooting at tips, 1–3 mm. thick at base: cauline leaves during anthesis mostly well expamded (those subtending flowers 1.5–10 cm. long, including the petiole, at expansion of the flower); their leaflets narrowly obovate, narrowly elliptical or oblanceolate; the middle leaflets of the largest leaves (of each plant) 1.5–7.5 cm. long, 9–27 toothed for about three-fourths their length: free blades of basal stipules linear-lanceolate, long-attenuate, usually inrolling; stipules (simple or cleft) of mature primary cauline leaves 0.7–3 cm. long: first flower usually from the node above the second well-developed internode: petals obcordate or retuse: first flowers expanded in eastern Massachusetts April 30–June 23.

Three pronounced varieties.

Leaves green and more or less strigose-pubescent or slightly whitened but not copiously silvery-sericeous beneath.
Stems (especially when young) hirsute or villous-hirsute, with spreading hairs.....Var. *typica.*
Stems strigose with short appressed hairs or glabrate....Var. *calvescens.*
Leaves densely silvery-sericeous beneath: pubescence of stems spreading, usually dense.....Var. *argyrisma.*

Var. **typica.** *P. simplex* Michx. Fl. Bor.-Am. i. 303 (1803); Nestler, Mon. Pot. 40, t. ix. fig. 2 (1816); Eaton, Man. ed. 2, 379 (1818); Lehm. Mon. Gen. Pot. 142 (1820); Bigel. Fl. Bost. ed. 2: 204 (1824); Hook. Fl. Bor.-Am. i. 192 (1834). *P. caroliniana* Poir. in Lam. Encyc. v. 595 (1804), not Rydb. N. Am. Fl. xxii[4]. 303 (1908). *P. sarmentosa* Muhl. in Willd. Enum. Hort. Berol. 554 (1809), in part (sheet no. 1 in Willdenow Herb.). *P. canadensis,* β. *simplex* (Michx.) T. & G. Fl. N. Am. i. 443 (1840), at least as to name-bringing synonym. *P. canadensis* Rydb. Mem. Dept. Bot. Columb. Univ. ii. 35 (1898), N. Am. Fl. xxii.[4] 303 (1908) and in Britton & Brown, Ill. Fl. ed. 2, ii. 251, fig. 2230 (1913); Robinson & Fernald in Gray, Man. ed. 7: 484 (1908); not L. Sp. Pl. i. 498 (1753).—Dry to moist open soil of fields, thickets, open woods, etc., central Nova Scotia and southwestern New Brunswick to southern Quebec, southern Ontario and Minnesota, south to North Carolina, Tennessee, southern Missouri and Oklahoma. The following are characteristic. QUEBEC: Deschênes sur la riviére Ottawa, *Rolland,* no. 15,505; Longueuil, *Victorin,* no. 3248. NEW BRUNSWICK: St. Andrew's, June 16, 1900, *J. Fowler;* NOVA SCOTIA: Bridgewater, *Fernald & Long,* no. 23,961 (late-summer state, with lateral leaflets uncleft, distributed as *P. pumila*). MAINE: Isle au Haut, July 12, 1920, *Kidder;* Rockland, *C. A. E. Long,* no. 570; South Poland, 1893, *Kate Furbish;* Cape Porpoise, May 25, 1895, *Fernald,* NEW HAMPSHIRE: Stratford Hollow, *Pease,* no. 13,574;

Fig. 1 (upper). Type of Potentilla canadensis in Linnean Herbarium.
Fig. 2 (lower). Specimen in Kalm's Herbarium in Upsala (photograph from Professor H. O. Juel.)

H. M. Gilkey del.

Fig. 1. Type of Potentilla simplex, × ¾, after *Nestler*. Fig. 2. Rhizome of P. simplex, × ¾. Fig. 3. P. sarmentosa, × ⅖ (sheet no. 2 in Herb. Willdenow). Fig. 4. P. sarmentosa, × ⅖, (sheet no. 1 in Herb. Willdenow).

Lebanon, June 3, 1887, *Kennedy;* Woodstock, *Fernald,* no. 11,728; Hampton Falls, June 4, 1916, *C. F. Batchelder;* Walpole, June 12, 1912, *Batchelder;* Hinsdale, June 9, 1920, *Batchelder.* VERMONT: North Haven, May 25, 1879, *Brainerd;* Middlebury, June 4, 1908, *Kennedy;* Hartford, June 12, 1920, *Eaton & St. John;* Rutland, *Eggleston,* nos. 1195–1197; Westminster, *Robinson,* nos. 101, 102. MASSACHUSETTS: Andover, *Pease,* no. 3649; Sudbury, May 24, 1918, *Knowlton;* Middlesex Fells, June 9, 1920, *Kidder;* Boxborough, *Hubbard & Torrey,* no. 463; Wellesley, May 31, 1899, *Rich;* Westwood, May 30, 1899, *Kennedy;* West Stoughton, May 22, 1909, *Blake;* Fall River, May 27, 1910, *Sanford;* Sandwich, *Fernald & Long,* no. 18,563; Eastham, *F. S. Collins,* no. 2094; Worcester, *Wiegand,* no. 1083; Erving, May 14, 1915, *Hunnewell, Macbride & Torrey;* South Hadley, June 10, 1926, *Knowlton;* Granby, May 29, 1910, *Knowlton;* Chicopee, *Murdoch & Torrey,* no. T439; Russell, *St. John & White,* no. 124; Adams, May 15, 1915, *Knowlton & Bean;* Sheffield, May 30, 1919, *Bean & Fernald.* RHODE ISLAND: Cumberland, May 29, 1904, *Williams;* Providence, *Chamberlain,* no. 80; Foster, June 10, 1922, *Eaton & Fassett;* Johnson, May 30, 1911, *Collins;* Block Island, *Fernald, Long & Torrey,* nos. 9600, 9656, 9658 (distributed as *P. pumila*). CONNECTICUT: Thompson, June 10, 1922, *Bill & Grigg;* Hebron, *Weatherby,* no. 4094; Meriden, May 17, 1903, *L. Andrews;* Huntington, June 5, 1902, *Eames;* Stratford, June 9, 1901, *Williams.* NEW YORK: Lisbon, *Phelps,* no. 1403; Brooklyn, June 2, 1885, *L. M. Parker;* Canadice, *C. C. Thomas,* no. 4312. NEW JERSEY: Stelton, *Halsted,* no. 128. PENNSYLVANIA: Sellersville, April 30, 1921, *Fretz.* DELAWARE: Newark, May 11, 1922, *Meredith.* VIRGINIA: White Rock Mt., June 21, 1892, *Small;* Covington, *Hunnewell,* no. 4032; Buckroe, *Robinson,* no. 474. ONTARIO: Belleville, May 24, 1878, *J. Macoun;* Leamington, *J. Macoun,* no. 34,409; Amherstburg, June 10, 1882, *Macoun.* OHIO: Newell Ledge, Portage Co., *R. J. Webb,* no. 5253; Oberlin, May, 1890, *Kofoid;* Sugar Grove, May 20, 1905, *Gleason.* KENTUCKY: Rice Station, Estill Co., *W. A. Anderson, Jr.,* no. 467. TENNESSEE: Elkmont, *W. A. Anderson, Jr.,* no. 843; Oliver Springs, *Anderson,* no. 955; Hollow Rock Jct., *Svenson,* no. 381; Memphis, *E. J. Palmer,* no. 17,276. MICHIGAN: Turin, June 20, 1901, *Barlow;* Douglas Lake Region, *Ehlers,* no. 361; Grand Rapids, 1900, *E. J. Cole.* ILLINOIS: Peoria, June, 1903 and 1904, *McDonald;* Muncie, May 24, 1908, *Gleason;* Decatur, *Gleason,* no. 217; Starved Rock, *Greenman, Lansing & Dixon,* no. 52. MINNESOTA: St. Paul, *Beach,* no. 102. IOWA: Fayette, June, 1894, *Fink.* MISSOURI: St. Louis Co., May 16, 1877, *Eggert;* Cedar Gap, *Lansing,* no. 2973. KANSAS: Cherokee Co., *Hitchcock,* no. 675. OKLAHOMA: Page, *Stevens,* no. 1478.

Var. **calvescens,** n. var., caulibus petiolisque strigosis vel glabratis; foliis subtus strigosis vel glabratis.—Newfoundland, Cape Breton and Prince Edward Island to the Laurentide district of Quebec, and west to Minnesota, south to South Carolina, Illinois and Oklahoma. The

following, from among the numerous specimens (especially from the North) are characteristic. Newfoundland: Rushy Pond, *Fernald, Wiegand, Bartram & Darlington*, no. 5782. Quebec: Valcartier, *Victorin*, no. 20,925. Prince Edward Island: Mt. Stuart, *Fernald, Bartram, Long & St. John*, no. 7634; Morell, *Fernald & St. John*, no. 11,095. Nova Scotia: Atlantic Cove, St. Paul Island, *Perry & Roscoe*, no. 247; Baddeck Bay, Cape Breton, *J. Macoun*, no. 19,092; Middleton, *Fernald, Pease & Long*, no. 21,506; Bridgewater, *Fernald & Long*, nos. 23,962, 23,963 (distributed as *P. pumila*); Boylston, July, 1890, *C. A. Hamilton;* Meteghan, *Fernald & Long*, no. 21,507; Yarmouth, *Howe & Lang*, no. 110, *Bissell & Long*, no. 21,505; Atwood Brook, *Bissell & Long*, no. 23,964. New Brunswick: Shediac Cape, July 6, 1914, *F. T. Hubbard.* Maine: Fort Fairfield, August 15, 1901, *Robinson;* Ashland, *Fernald*, no. 2301; Veazie, August 22, 1908, *Fernald;* Dover, June 29, 1896, *G. B. Fernald*, no. 156; Pembroke, July 27, 1909, *Fernald*, no. 1917 (type in Gray Herb.); Roque Bluffs, July, 1913, *Knowlton;* Seal Harbor, July 23, 1889, *Redfield;* Northeast Harbor, August 5, 1910, *Williams;* Deer Isle, *A. F. Hill*, no. 2083; Dedham, *Fernald & Long*, no. 13,826; Matinicus, *C. A. E. Long*, no. 67; Bristol, July 9, 1903, *Churchill;* Leeds, July 23, 1915, *Knowlton;* Cumberland, July 5, 1900, *Chamberlain.* New Hampshire: Pittsburg, *Pease*, no. 10,134; Randolph, *Pease*, nos. 10,012, 12,766; Shelburne, *Fernald & Pease*, no. 16,975 (as *P. pumila*); Woodstock, *Fernald*, no. 11,729; Hillsborough, July 28, 1920, *C. F. Batchelder;* Jaffrey, *Robinson*, no. 118; Alstead, *Fernald*, no. 547. Vermont: Clarendon, *Eggleston*, no. 1194; Townshend, June 24, 1916, *L. A. Wheeler;* Manchester, *Day*, no. 62. Massachusetts: Gloucester, June 7, 1896, *Rand & Robinson;* Beaver Brook Reservation, June 13, 1921, *Kidder;* Boston, September 15, 1901, *Rich;* Dover, *Hunnewell*, no. 2751; New Bedford, May 29, 1903, *Hervey;* Falmouth, *Fernald*, no. 602; Barnstable, *Fernald & Long*, nos. 16,876, 18,564; Nonamesset, *Fogg*, no. 3355; Cuttyhunk, *Fogg*, no. 2536; Polpis, *Day*, no. 55; Lancaster, May 30, 1914, *Hunnewell & St. John;* Holden, May 30, 1912, *Blake & Fernald;* Worthington, *Robinson*, no. 686; Middlefield, *Fernald & Long*, no. 9659; Montville, June 28, 1912, *Hoffmann.* Rhode Island: Providence, July 4, 1892, *Collins;* Barrington, May 30, 1911, *Fernald;* Newport, June 19, 1903, *Robinson;* South Kingston, June 11, 1927, *Bill, Eaton & Rehder.* Connecticut: Thompson, *Weatherby*, no. 4863; Stafford, *Weatherby*, no. 2653; Glastonbury, June 2, 1912, *Driggs.* New York: Boreas Ponds, Essex Co., *House*, no. 9093, in part; Canton, *Phelps*, no. 1607; Fisher's Island, *St. John*, no. 2742; Caroline, *Eames & Wiegand*, no. 12,224; Dryden, *Eames & Gershoy*, no. 10,121; Dryden, *Gershoy*, no. 8317. Pennsylvania: south of Moscow, *L. F. & F. R. Randolph*, nos. 19, 50. Maryland: Washington, *Hunnewell*, no. 6614. District of Columbia: Naucks, June 1, 1913, *Steele.* South Carolina: Summerville, *Robinson*, no. 252 (transition to var. *typica*). Illinois: Champaign, *Pease*, no. 11,850. Wisconsin:

Trempleau Valley, July 20, 1892, *Schuette* (distributed as *Rubus triflorus*). MINNESOTA: Nichols, June, 1892, *Sheldon*. OKLAHOMA: Idabel, *H. W. Houghton*, no. 3652; Pawhuska, *Stevens*, no. 2038.

Var. *calvescens*, well marked in the North and the only form of the species in most of the area from central Maine to Newfoundland, is usually not so well marked southward. Northward it often occurs in wet thickets or meadows and even in wet sphagnous bogs. It is the plant mistakenly identified in recent years as typical *P. simplex: P. canadensis*, var. *simplex* Rydb., Mem. Dept. Bot. Columbia Univ. ii. 36 (1898); Robinson & Fernald in Gray, Man. ed. 7: 484 (1908); not Torr. & Gray (1840), at least as to type. *P. simplex* Rydberg, N. Am. Fl. xxii[4]. 302 (1908) and in Britton & Brown, Ill. Fl. ed. 2, ii. 251, fig. 2228 (1913); not Michx. Fl. Bor.-Am. i. 303 (1803).

Var. **argyrisma**, n. var., foliis subtus dense argenteo-sericeis; caulibus villosis vel villoso-hirsutis.—Pennsylvania to Kentucky and Illinois. PENNSYLVANIA: between York Furnace and Tucquan, May 11, 1901, *Heller*. KENTUCKY: Robard, Henderson Co., *W. A. Anderson, Jr.*, no. 24. ILLINOIS: roadside, Urbana, May 13, 1910, *Pease*, no. 12,547 (TYPE in Gray Herb.); Decatur, May 11, 1915, *Clokey;* Bird Haven, Olney, *Ridgeway*, nos. 718–720.

EXPLANATION OF PLATES 214 AND 215.

PLATE 214. POTENTILLA CANADENSIS L. FIG. 1 (upper). The Kalm specimen in the Linnean herbarium (TYPE of the species). FIG. 2. The Kalm specimen preserved in Upsala (photograph from PROFESSOR H. O. JUEL).

PLATE 215. FIG. 1. TYPE of POTENTILLA SIMPLEX Michx., after *Nestler*, × ¾. FIG. 2. Rhizome of P. SIMPLEX, × ¾. FIG. 3. Sheet no. 2 of P. SARMENTOSA Muhl. in Herb. Willdenow (from photograph supplied by PROFESSOR L. DIELS), × ⅔. FIG. 4. Sheet no. 1 of P. SARMENTOSA Muhl. in Herb. Willdenow (from photograph supplied by PROFESSOR L. DIELS), × ⅔. Plate drawn by DR. H. M. GILKEY.

THE PENNSYLVANIA STATIONS OF ARCEUTHOBIUM PUSILLUM.—Ludlow Griscom's article in the April number of RHODORA, recording the interesting discovery by himself and Mr. K. K. Mackenzie of *Arceuthobium pusillum* at Pine Swamp in Sussex Co., New Jersey, states that its "range is here extended south from northwestern Connecticut."

The statement would seem to imply that the dwarf mistletoe had not previously been found so far south. It has long been known, however, from a number of places in northeastern Pennsylvania and particularly from the bog near Tannersville in Monroe Co.—locally called "The Cranberry"—some thirty miles southwest of Messrs. Griscom and Mackenzie's Sussex Co. swamp and about 250 ft. lower

in altitude. If a line be drawn from Kent, Connecticut[1] southwest to Tannersville, Pa., Pine Swamp will be found to lie a little to the north of it, and the occurrence of the parasite there is of interest as adding a station along its southern range rather than as extending the range southward, and also as adding one on the eastern side of the Delaware Valley to those already known in the same region on the western.

The material in the herbarium of the Academy of Natural Sciences shows a somewhat wider distribution of the species in Pennsylvania than is assigned to it in the local Floras. Porter's "Flora of Pennsylvania" records it only from Monroe and Pike Counties,—or rather inadvertently appears to do so. But Lehigh Pond, one of the two stations given for Monroe, is in Wayne Co. Taylor's "Flora of the Vicinity of New York" gives its Pennsylvania range as "Mountain summits in Pike and Monroe Counties," and Twining's "Flora of Northeastern Pennsylvania" notes only Tannersville and Lehigh Pond. It may, therefore, not be without interest to add a list of the collections at hand. They are:

Monroe County
Tannersville, Sept. 10, 1896, *Walter Seibert;* and a series of others collected there at subsequent dates by various botanists.
Pike County
Spruce Pond, July 9–16, 1899, *Stewardson Brown.*
Mud Pond, July 9–16, 1899, *Brown & Saunders.*
Wayne County
Marsh above Lehigh Pond, 1886, *Dudley.*
Sullivan County
Shadynook, July 16, 1901, *Stewardson Brown.*
Near Lopez, August 25, 1908, *C. S. Williamson.*

Dr. Witmer Stone tells me that Shadynook—a name not to be found on most maps—is about 2½ miles from Lopez, and the two Sullivan Co. collections may quite probably come from the same place.—Arthur N. Leeds, The Academy of Natural Sciences, Philadelphia.

Rorippa amphibia in Fairfield County, Connecticut.—On June 8, 1930, while driving along the Danbury Road in the Town of Ridgefield, the writer's attention was attracted by a colony of plants of the mustard family which had an unfamiliar look. Failing to

[1] The southernmost point of its distribution in Connecticut according to Eaton's map in the issue of Rhodora quoted above.

identify the plant, a specimen was sent to Mr. C. A. Weatherby, who very kindly reports as follows: "*Rorippa amphibia* (L.) Bess.—Except for one old record, now proved erroneous, the only American locality for this species is on the St. Lawrence River, near Montreal, where it grows luxuriantly in shallow water (Brother Marie-Victorin)."

At the Ridgefield station for this plant none of the plants were growing in water. Some in fact were on very dry soil, though near a ditch. Two possible means of introduction suggest themselves. A railroad runs within a hundred yards of the colony while on the opposite side is a newly established nursery.—Leonard J. Bradley, Wilton, Conn.

Pedicularis labradorica.—It seems to have been generally overlooked that the boreal species, which is regularly passing as *Pedicularis euphrasioides* Stephan in Willd. Sp. Pl. iii[1]. 204 (1801), has an earlier and valid name which should be revived. The species was published and clearly illustrated in Houttuyn, Pflanzensyst. viii. 39, t. 57C (1782). When he took up Stephan's manuscript-name, Willdenow knew of *P. labradorica*, which he treated as an American variety of the Asiatic species of Stephan, as "β. P. (*labradorica*)". I have not seen the Stephan material, but the Siberian plant is usually considered identical with the American. The latter, at least, should be called P. labradorica Houttuyn (1782) rather than *P. euphrasioides* Stephan (1801).—M. L. Fernald.

NOTES ON VACCINIACEAE

W. W. Ashe

vaccinium § cyanococcus Gray

Vaccinium **missouriense**, sp. nov. Frutex 2–5 dm., *Vaccinio V. Margarettae* dicto potius quam *V. vacillanti*, baccis nigris nitidis et racemis pubescentibus similis, differt tamen foliis crassis, subdistichis, oblongis, lanceolatis vel oblanceolatis, basi acutis. Ramuli griseo-pubescentes. Folia decidua, crassa, lanceolata, oblanceolata vel oblonga, 3.5–5 cm. longa, 1.5–2 cm. lata, acuta, basi cuneata, integra, supra minute pubescentia, subtus griseo-pubescentia, subdisticha. Racemi breves conferti, pedunculis et saepe pedicellis pubescentibus. Baccae nigrae, nitidae, nunquam glaucae, parvae, 5–7 mm. diametro. Flores non visi.—Prope Monteer, Missouri. *V. vacillans* var. *Missouriense* Ashe in Torreya **25**: 10. 1925.

A straggling shrub 2–5 dm. high with underground stems, twigs green, pubescent with short curved grayish hairs persistent until the

third year. Leaves thick, oblanceolate, lanceolate or oblong, 3.5–5 cm. long, 1.5–2 cm. wide, acute, cuneate at base, entire, yellowish green and sparingly pubescent above, pubescent below with rather long spreading grayish simple hairs. Buds large, bright red, glabrous, outer scales mucronate. Racemes short, compact, 3–6-fruited; peduncles which are rarely 1 cm. long, and usually the 3–5 mm.-long pedicels as well, pubescent, or pedicels merely puberulent, with short spreading grayish hairs. Flowers unknown. Fruit black. Type, *W. W. A.* Monteer, Shannon County, Missouri, May 9, 1924, and (from the same bush) Sept. 13, 1923.

The dullish black fruit in short pubescent racemes and the prevailingly oblanceolate entire leaves are distinctive in separating this plant from *V. vacillans* which grows with it. Its affinities seem to be rather with *V. Margarettae* Ashe of the Southern Appalachians than with *V. vacillans* but it is well separated from both.

Vaccinium **serum**, sp. nov. Frutex 1–1.5 m. alta, ramulis plerumque glabris glaucisque. Folia decidua, plerumque oblonga et acuta, subinde elliptica et obtusa, rariter rhombea, 3.5–6 cm. longa, 2–2.7 cm. lata, integerrima, perspicue venosa, glabra vel costis subtus pubescentibus. Racemi 5–11-flori, glabri, pedunculo stricto, pedicellis multum longiore; pedicellis superioribus quam corolla longioribus; pedicellis inferioribus quam corolla brevioribus; floribus tardis. Corrolla subcylindracea, alba, 5–7 mm. longa. Baccae parvae, 6–8 mm. diametro, nigrae sive glauco-nigrae.—In collibus sylvaticis Virginiae et Marilandae prope Washington.

A shrub 4 to 9 dm. high. Twigs slender, green or yellowish, rarely reddish, glabrous and glaucous or sometimes pubescent but not in lines. Leaves prevailingly of an oblong or elliptic type, sometimes rhombic, occasionally oblong-ovate, or the smaller broadly elliptic or even ovate, the larger 3.5 to 6 cm. long, 2 to 2.7 cm. wide, acute at apex, narrowed or acute at base, often sessile or the short petiole margined, entire, often with 2 to 3 pairs of red sessile glands near the base, above glabrous from the first or the midrib permanently puberulent, beneath slightly paler and glabrous or the midrib and a few larger veins sparingly pubescent, bronze or reddish as they unfold, at length dark green above, the prominent veins often reddish beneath. Flowers appearing when the leaves are about half grown in glabrous rather elongated, 2 to 2.5 cm.-long racemes, often clustered at the ends of naked twigs, short cylindric or somewhat campanulate, 5 to 6 mm. long, 3 to 3.5 mm. thick, rarely as much as twice as long as thick, open at the mouth, white or flesh colored; calyx glabrous fully one half the length of the corolla; style barely as long as the corolla; the lower pedicels about the length of the flowers, the upper less than half as long; bracts spatulate, small, reddish, early deciduous. Fruit small, 5 to 8 mm. thick, subglobose or ovate, blue-black, usually with a bloom, capped by the erect and prominent divisions of the calyx.

Common along the Potomac river, in both Maryland and Virginia at Great Falls and extending into the District of Columbia, often on rock bars where it grows with *Amelanchier sera* Ashe and *A. oblongifolia* Roem., or in rocky woods, where many collections have been made since 1916. The TYPE, both flowers and fruit from the same plant, Great Falls, VIRGINIA, near Elkins station; flowers, May 3, 1918; fruit, June 23, 1918. *W. W. A.*

It was at one time supposed that this form might be referred to *V. Marianum* Wats.,[1] since the cultivated plant upon which his description was based probably came from Maryland. His detailed and tabulated description, however, calls for peduncle or floral "axis covered with thick white hairs," "pedicels twice length of flower" and for pistil "length of the stamens." No specimen of the form under consideration has been found which has these characteristics, or any one of them.

V. SERUM var. **pubifolium**, var. nov., a typo differt foliis subtus pubescentibus.

This variety differs from the type form in having the lower surface of the leaves pubescent.—TYPE, *W. W. A.* Great Falls, VIRGINIA, May 4 and June 23, 1918.

VACCINIUM VACILLANS Sol. var. **columbianum**, var. nov., a typo differt foliis majoribus, crassis, subtus plerumque rubro-nervosis.

Leaves glabrous, larger than in the type, thicker, with the veins prominent beneath and usually red. TYPE, *W. W. A.* Below Great Falls, VIRGINIA, April 28 and June 23, 1918. This variety is very common along the Potomac River growing with the type form in Maryland, Virginia and District of Columbia.

V. VACILLANS var. COLUMBIANUM f. **mollifolium**. Folia subtus molliter pubescentia.

The glabrous large-leaved variety passes into a form which occurs with it having the leaves softly pubescent beneath.—TYPE, *W. W. A.* Chesapeake Beach, Calvert County, MARYLAND, July, 1916.

VACCINIUM **arkansanum**, sp. nov. Frutex 1.5–4 m. alta. Folia ovata, 6–8 cm. longa, 2.1–3 cm. lata, apice acuta, integra, subtus pubescentia. Racemi 6–10-flori, glabri, floribus albis, subcylindraceis, quam in *V. atrococco* longioribus, quam in *V. corymboso* brevioribus. Baccae glaucae, 6–10 mm. diametro. In umbrosis humidis prope Hot Springs, Arkansas.

A shrub 1.5–4 m. tall with furrowed but close brown bark. Leaves ovate, 6–8 cm. long, 2.1–3 cm. broad, gradually acute, usually rounded at the rather broad base, entire, dark green above, slightly paler and sparingly pubescent beneath. Racemes 6–10-flowered, glabrous. Corolla white or greenish, short cylindrical, 5–8 mm. long, nearly as wide as long, the mouth open. Berry 6–10 mm. in diameter, blue-

[1] Dend. Brit. **2**: *t.* 124. 1825.

black beneath a bloom.—Type: *W. W. A.*, flowers and fruit from the same clump, 6 miles north of Hot Springs, Arkansas, on the Little Rock road Apl. 15, 1928, June 27, 1929.

This plant which grows with alder in swamps and along small streams in Garland and Perry counties, Ark., has been confused with *V. corymbosum* when in flower and with *V. atrococcum* when in fruit. The fruit is considered to be of only fair eating quality.

Vaccinium **alto-montanum**, sp. nov. Frutex 3–10 dm. alta, *V. pallido* affinis, ab eo recedit tamen foliis oblongis minoribusque. Folia decidua, oblonga, apice et basi acuta, 2.8–5.3 cm. longa, membranacea, glabra, subtus pallida, integra, ciliata, venulosa. Racemi 6–10-flori, glabri. Baccae glaucae, 8–14 mm. diametro.—Montes alti Carolinae-Septentrionalis et Tennesseensis.

Leaves rather thin, 2.8–5.3 cm. long, 0.9–1.4 cm. wide, oblong, gradually narrowed and acute at each end or narrowed to a slightly rounded base, glabrous on both faces, pale, prominently veined, and more or less reticulated below, almost sessile, the petiole puberulous, entire or finely serrulate or ciliate. Berries (from Cassi Creek, Unicoi Co., Tenn.) 8–14 mm. thick, dark blue with a bloom, finely flavored. Racemes 1.8–2.6 cm. long, 6–12-flowered; calyx lobes broadly triangular or ovate-triangular, prominent. Buds red, glabrous, scales mucronate.

Head of Cassi Creek, Unicoi County, Tennessee, July, 1922. High ridges of Wilson Bald, Unicoi County, Tenn., July, 1922. Rabun County, Georgia, June 20, 1924. Fodderstack Mt., Macon County, North Carolina, June 22, 1924 (type). Sunset Rock, Highlands, Macon County, N. C., June 24, 1924. Satula Mt., Macon County, N. C., June 20, 1924. All *W. W. A.*

Related to *V. pallidum* Ait., with which at high altitudes it is often associated and from which it differs in the thinner, smaller and extremely narrowed leaves which are prevailingly entire. Flowers unknown.

Vaccinium Margarettae Ashe, which was originally reported from Rabun County, Georgia, has recently been found (W. W. A., June 1930) in Jackson County, Alabama, where it is not uncommon upon the Cumberland Plateau about ten miles south of the Tennessee State line.

Vaccinium atrococcum var. **Longianum**, var. nov. A typo recedit baccis glaucis.

Flowers and habit of shrub as in the typical form, but fruit glaucous. —Type (in herb. W. W. A.): *F. W. Pennell and Bayard Long*, no. 7592, June 26, 1912, serpentine barrens, Paoli, Chester County, Pennsylvania, where numerous collections of this form have been made.

Vaccinium fuscatum var. **pullum**, var. nov. A typo differt foliis minoribus, crassis et oblongis.

The plate of *V. formosum* Andr. (Bot. Rep. *t.* 97. 1797) which refers to Aiton's description of the same cultivated plant upon which *V. fuscatum* Aiton (Hort. Kew. I, 2: 11. 1789) is based, shows a plant with relatively large ovate leaves. This is the prevailing form of *V. fuscatum*. In the lake region of Marion County, Florida, especially in the vicinity of Sellers Lake, the common form which seems to occur rarely elsewhere, has small thick oblong leaves, 2–3 cm. long, 1–1.5 cm. wide, acute at each end with revolute margins. TYPE: May 14, 1929, Marion County, FLORIDA, *W. W. A.*

DECAMERIUM

Nuttall[1] called attention to the characters which separate a group of eastern North American *Vacciniaceae* typified by *Vaccinium frondosum* L. from *Gaylussaccia* and proposed for this group the name *Decamerium*.[2] *Gaylussaccia* HBK.[3] is based upon a South American shrub having a 10-celled drupe, sulcate with 10 grooves; scant foliage, the leaves with a prominent apical gland, and scarlet flowers in axillary racemes. As early as 1839 Dunal[4] listed 29 species having these characters all but one (from Java) in South America, most of them in tropical Brazil. It seems to form a well defined tropical genus contrasted with *Thibaudia* from which it was held to differ as *Arctostaphylos* differs from *Arbutus*.

Nuttall transferred to his proposed genus *Vaccinium frondosum* L.; *V. resinosum* Ait.; *V. hirtellum* Ait.; and *V. dumosum* Andr.

The following additional species should be transferred:

DECAMERIUM **brachycerum**, comb. nov. *Vaccinium brachycerum* Michx. Fl. Bor. Am. **1**: 234. 1803. *Gaylussaccia brachycera* Gray Man. 259. 1848.

[1] Am. Phil Soc. **8**: 259. 1843.

[2] The name *Decachaena* was suggested by Torrey and Gray (ex Gray in Am. J. Sci. **42**: 43. 1841) for the group to which Nuttall applied the name *Decamerium* but the name apparently was given only a subgeneric significance. "Several of the more common species" (of *Vaccinium*) "which I have cursorily examined, exhibit a more or less completely 8–10-celled ovary, but with many ovules in each cell. There is a small group, however (*Decachaena, Torr. & Gray ined.*) presenting a different structure which is best exemplified in *V. resinosum* Ait."

It scarcely seems possible to consider *Adnaria* Raf. (Flo. Lud. 56. 1817) as referring to this group although it is suggested by Britton and Brown. The characters which Rafinesque mentions and which might point to *Gaylussaccia* or *Decamerium* are applicable to *Vaccinium*, "stamina 10, disco glanduloso inserta" and "bacco 5-locularis?" but for the further statement that the proposed genus is "intermediary between the genera Oxycoccus and Vaccinium." The genus is based upon a species having leaves glabrous, "with a few teeth, flowers 2–3 together"; "a shrub 9 ft. high, growing in swamps." No eastern North American representative of the group under consideration seems to meet this description although several species were known to Rafinesque.

[3] Nov. Gen. **3**: 275. 1818.

[4] In D.C. Prod. 7, pt. 2: 556 et seq.

Decamerium **nanum**, comb. nov. *Gaylussaccia frondosa* var. *nana* Gray Syn. Fl. N. A. Ed. 2, 2: pt. 1, 396. 1886. *Gaylussaccia nana* Small in Bul. Tor. Cl. 24: 443. 1897.

Decamerium **tomentosum**, comb. nov. *Vaccinium tomentosum* Pursh in Gray's Syn. Fl. **2**: pt. 1: 19. 1878 (as synonym). *Gaylussaccia frondosa* var. *tomentosa* Gray Syn. Fl. N. A. **2**: pt. 1: 19. 1878.

Decamerium **ursinum**, comb. nov. *Vaccinium ursinum* M. A. Curtis in Am. J. Sci. **44**: 82. 1843. *Gaylussaccia ursina* T. & Gr. in Gray in Mem. Am. Acad. (II), **3**: 49. 1846.

Decamerium hirtellum (Ait.) Nutt. This plant is commonly considered as being deciduous but in all spring collections made in west Florida the old leaves persist until the new ones are developed. The drupe, seeming undescribed, is black, 5–9 mm. thick and glandular-hispid. The species is variable. The most distinct form is

D. hirtellum var. **griseum**, var. nov. Folia molliter pubescentia et plerumque obovata.

Leaves prevailingly obovate, sometimes oblong, 3–4 cm. long, both faces as well as the twigs, rachis and pedicels soft-pubescent with short grayish hairs but calyx glandular-hispid as in the type. 5–7 dm. high —Titi swamps with slash pine, the southwestern part of Okaloosa County, Florida. Type: *W. W. A.* Apl. 19, 1923.

In the grassy pine barrens in the same portion of this county there is a dwarf form (forma **minimum**, n. f.) of the same species about 1 dm. high sparingly hispid, or even glabrate except for the calyx which is as in the type. Type: *W. W. A.* Apl. 19, 1923.

Washington, D. C.

Mountain Laurel (Kalmia latifolia) at Cherryfield, Maine. —On another occasion[1] the writer has called attention to a little-known report of the occurrence of *Kalmia latifolia* at Cherryfield, Maine.

This report was published about eighty-seven years ago by Aaron Young, Jr.,[2] and a specimen of the plant from Dr. Young exists in the Parker Cleaveland collection in Bowdoin College, where, through the courtesy of Dr. Manton Copeland, it was examined some years ago by the late Dr. Dana W. Fellows and the writer.

Since finding this record and viewing the specimen in the Bowdoin collection, the writer has felt much interest in this out-lying station for a plant which is very local in the state, and he has made many inquiries concerning the place of its occurrence.

[1] 1913, Norton, Rhodora, **15**, 142.

[2] 1843, Young, Bangor Daily Whig and Courier (spring or early summer).

It seems that half a century ago, more or less, the plant was quite abundant there, and the flowers in considerable demand for decoration. Then the place was much resorted to, at the flowering season. Through extensive picking, lumbering operations and a forest fire, it has been greatly reduced in extent, and now the place is very seldom visited. It is said that very few persons now know the location of the place, though a general knowledge exists that some "flower" of rare beauty occurs in "The Devil's Garden."

While attending the field meeting of the Josselyn Botanical Society at Beddington, in July 1930, only about twenty miles from Cherryfield, it was deemed worthwhile to make an effort to rediscover this long-forgotten station. On July 8, securing for a guide one of the few local men acquainted with the place, a party composed of Mr. and Mrs. Ralph C. Bean, Miss W. A. A. Fiske, Miss Sue L. Gordon, Mr. H. M. W. Haven, Miss Annie Nichols and the writer, visited the place and secured specimens to re-establish the station. The location is about three miles northeast by east from Cherryfield village, on the southern edge of a swampy tract in mixed second growth, and is much shaded by the trees. But three or four plants were in flower this year, and we found no evidence to indicate further flowering for the season.

Several small patches of the plant exist now, in a space of about a quarter of an acre, though the guide declared that the plant is again increasing.—Arthur H. Norton, Portland Society of Natural History.

The Home of Kerria japonica.—On p. 29 I published a map (map 3) indicating that *Kerria japonica* is indigenous only in China, and in a footnote I said: "*Kerria japonica* DC., in spite of its specific name, is endemic in China." My friend, Professor Nakai, however, writes from Tokyo: "*Kerria* is also indigenous to Japan. It has simple flowers nearly always and rarely semi-double flowers. The genuine double-flowered form which is known as Tai Tan Hoa by Chinese, as Yae-yamabuki by Japanese, might have been imported to Japan from China, yet the history is unknown. *Kerria* grows wild among bushes on the lower slopes of mountains, on hills, and on the plains of Hondo, Shikoku and Kiusiu. Its occurrence wild in Korea is not ascertained as yet." My error arose through reliance on the statements of the great specialist on the *Rosaceae*, Focke, and of two

of the recognized authorities on the woody plants of eastern Asia. Focke says of *Kerria:* "Aus den Gärten Ostasiens in Europa eingeführt, namentlich in einer Sorte mit gefüllten Bl.; wildwachsend an wenigen Stellen in China gefunden."[1] Schneider implies that it is native of China and cultivated or wild elsewhere, saying: "China: Kiangsi, Hupei, Sz'tschwan; sonst in ganz O.-As. seit alters kultiviert und verwildert."[2] Rehder, similarly, says of the monotypic *Kerria* "One species in China,"[3] without mentioning Japan. Dr. Nakai's letter, however, indicates that the geographic range of the indigenous shrub inferred from these statements is incomplete.—M. L. Fernald.

[1] Focke in Engl. & Prantl, Pflanzenr. iii[3]. 28 (1894).
[2] Schneider, Handb. Laubholzk. i. 502 (1904).
[3] Rehder, Man. Cult. Trees and Shrubs, 407 (1927).

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